

## WHAT IS CLAIMED IS:

1. A signal transmission line for transferring a modulating signal from a signal source having an output impedance of 50  
5  $\Omega$  to an optical modulator, said signal transmission line comprising:

a signal line and at least one associated ground line, said signal line having a characteristic impedance of 35 to 47  
 $\Omega$ ; and

10 a termination resistor having a resistance of 50 to 150  $\Omega$ .

2. The signal transmission line according to claim 1, further comprising a series resistor having a resistance of 10  
 $\Omega$  or below.

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3. The signal transmission line according to claim 1, wherein said signal line and said associated ground line form a micro-strip line.

20 4. The signal transmission line according to claim 3, wherein said signal line has a width larger than a design width of a signal line having a characteristic impedance of 50  
 $\Omega$  in another micro-strip line.

25 5. The signal transmission line according to claim 1,

wherein said at least one associated ground line includes a pair of ground lines extending on a common plane with said signal line to sandwich therebetween said signal line, whereby said signal line and said ground lines form a  
5 coplanar waveguide.

6. The signal transmission line according to claim 5, wherein said at least one associated ground line further includes a ground plate opposing said signal line and said  
10 ground lines with an intervention of an insulator.

7. The signal transmission line according to claim 5, wherein a gap between said signal line and each of said ground lines is smaller than a design gap between a signal  
15 line and each of a pair of ground line in another coplanar waveguide.

8. A laser module comprising a laser diode, an optical modulator for modulating laser emitted by said laser diode,  
20 and a signal transmission line, said signal transmission line comprising:

a signal line and at least one associated ground line, said signal line having a characteristic impedance of 35 to 47  $\Omega$ ;

25 a series resistor having a resistance of 10  $\Omega$  or below;

and

a termination resistor having a resistance of 50 to 150  $\Omega$ .

9. A signal transmission line for transferring a modulating  
5 signal from a signal source having an output impedance of  $R_1$   
 $\Omega$  to an optical modulator, said signal transmission line  
comprising:

a signal line and at least one associated ground line,  
said signal line having a characteristic impedance of  $0.7R_1$  to  
10  $0.94R_1$ ; and

a termination resistor having a resistance of  $R_1$  to  $3R_1$ .